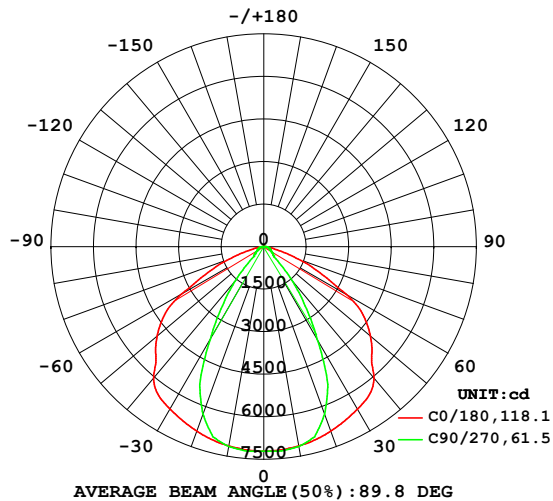


LUMINAIRE PHOTOMETRIC TEST REPORT

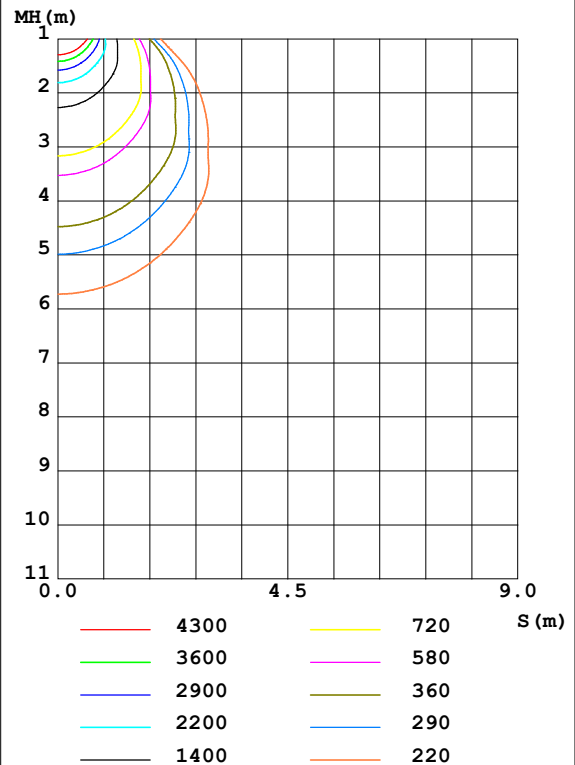
Test:U:220.0V I:0.4288A P:91.54W PF:0.9704 Lamp Flux:12093.7x1 lm					
NAME: LHB03-090		TYPE:90W		WEIGHT:	
SPEC.:5000K Ra70 60120DEG L00302		DIM.: 0.34*0.3*0.065		SERIAL No.:	
MFR.: EVERFINE		SUR.:0.28*0.27		Shielding Angle:	

DATA OF LAMP		PHOTOMETRIC DATA Eff: 132.12 lm/W			
MODEL	LHB03-090	I _{max} (cd)	7230	S/MH (C0/180)	1.38
NOMINAL POWER(W)	90	LOR(%)	100.0	S/MH (C90/270)	0.92
RATED VOLTAGE(V)	220	TOTAL FLUX(lm)	12094	η UP,DN(C0-180)	0.0,50.0
NOMINAL FLUX(lm)	12093.7	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,50.0
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	1.00
TEST VOLTAGE (V)	220	η down (%)	100.0	CIBSE SHR MAX	1.05

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2017-01-09

Checker:

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
 Humidity: 65.0%
 Test Distance: 9.500m [K=1.0000]
 Remarks:

Assessor:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum,lamp
5	7190	7215	7230	7215	7190	7214	7230	7214	0- 5	172.5	172.5	1.43,1.43
10	7134	7158	7156	7158	7134	7157	7156	7157	5- 10	514.0	686.5	5.68,5.68
15	7046	7032	6942	7032	7046	7033	6942	7033	10- 15	840.7	1527	12.6,12.6
20	6920	6786	6285	6786	6920	6788	6285	6788	15- 20	1130	2657	22,22
25	6772	6204	5357	6204	6772	6203	5357	6203	20- 25	1346	4003	33.1,33.1
30	6614	5389	3787	5389	6614	5387	3787	5387	25- 30	1454	5457	45.1,45.1
35	6439	4258	2549	4258	6439	4251	2549	4251	30- 35	1427	6885	56.9,56.9
40	6049	2843	1531	2843	6049	2831	1531	2831	35- 40	1299	8184	67.7,67.7
45	5390	1880	513.7	1880	5390	1864	513.7	1864	40- 45	1076	9260	76.6,76.6
50	4909	1322	431.2	1322	4909	1312	431.2	1312	45- 50	831.6	10092	83.4,83.4
55	4318	862.0	348.8	862.0	4318	869.5	348.8	869.5	50- 55	651.9	10744	88.8,88.8
60	3355	644.8	266.3	644.8	3355	650.0	266.3	650.0	55- 60	491.9	11235	92.9,92.9
65	2187	474.4	236.2	474.4	2187	472.8	236.2	472.8	60- 65	335.8	11571	95.7,95.7
70	1300	342.7	206.1	342.7	1300	340.4	206.1	340.4	65- 70	230.0	11801	97.6,97.6
75	589.8	217.5	175.9	217.5	589.8	216.7	175.9	216.7	70- 75	149.5	11951	98.8,98.8
80	189.1	101.7	121.4	101.7	189.1	102.9	121.4	102.9	75- 80	85.34	12036	99.5,99.5
85	29.54	57.65	66.89	57.65	29.54	58.55	66.89	58.55	80- 85	41.62	12078	99.9,99.9
90	3.667	12.66	12.38	12.66	3.667	13.14	12.38	13.14	85- 90	16.06	12094	100,100
95									90- 95			
100									95-100			
105									100-105			
110									105-110			
115									110-115			
120									115-120			
125									120-125			
130									125-130			
135									130-135			
140									135-140			
145									140-145			
150									145-150			
155									150-155			
160									155-160			
165									160-165			
170									165-170			
175									170-175			
180									175-180			
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

Conical surface Flux(90deg): 9260 lm

%lum = 76.6%

%lamp = 76.6%

Conical surface Flux(120deg): 11235 lm

%lum = 92.9%

%lamp = 92.9%

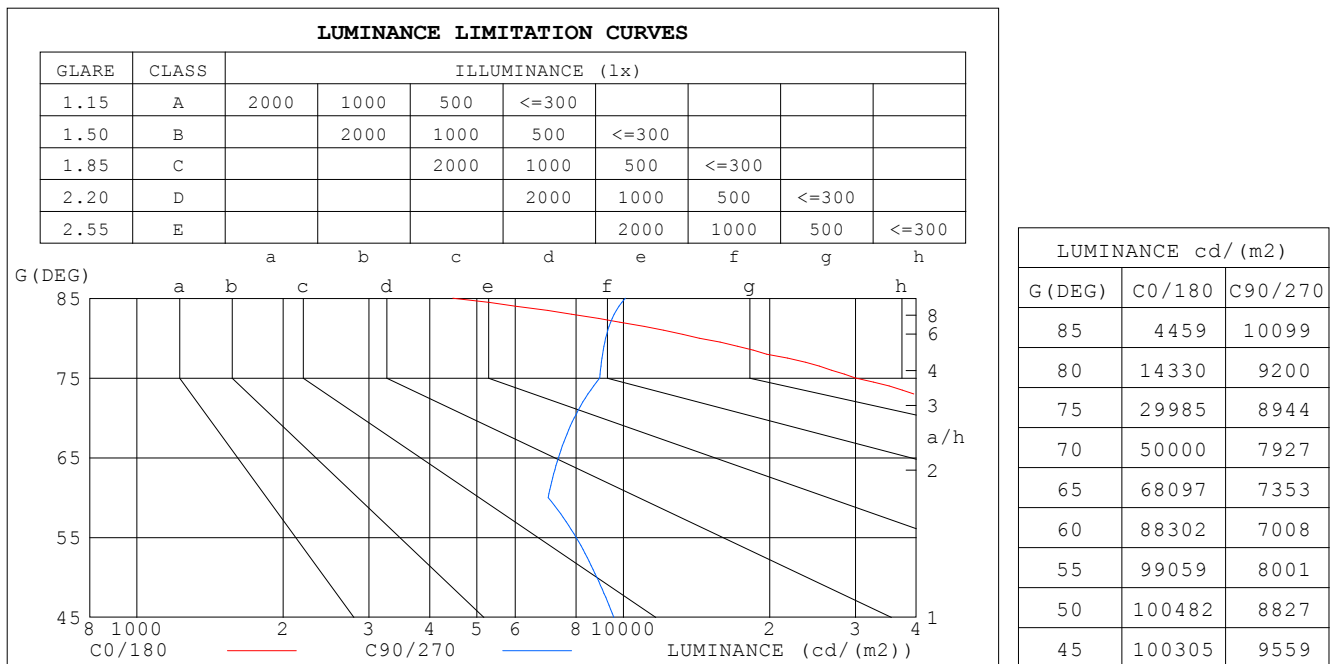
C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2017-01-09

Checker:

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
 Humidity:65.0%
 Test Distance:9.500m [K=1.0000]
 Remarks:

Assessor:

LUMINANCE LIMITATION CURVES



C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-01-09

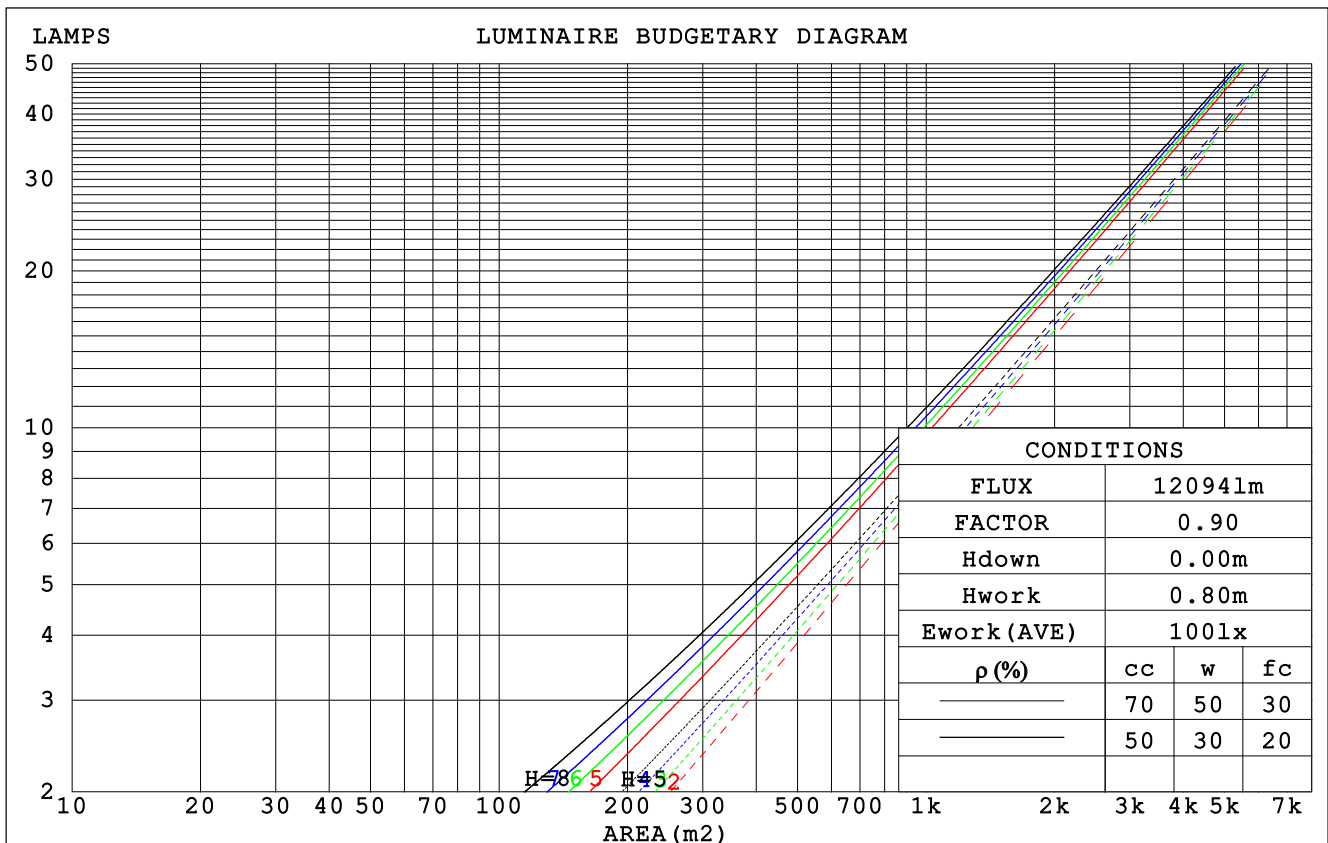
Checker:

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity: 65.0%
Test Distance: 9.500m [K=1.0000]
Remarks:

Assessor:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

pcc	80%			70%			50%			30%			10%			0
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio			Coefficients of Utilization(CU)												
0.0	1.19	1.19	1.19	1.16	1.16	1.16	1.11	1.11	1.11	1.06	1.06	1.06	1.02	1.02	1.02	.00
1.0	1.08	1.05	1.02	1.06	1.03	1.00	1.02	.99	.97	.98	.96	.94	.94	.93	.91	.89
2.0	.97	.92	.88	.96	.91	.87	.92	.88	.85	.89	.86	.83	.86	.84	.81	.79
3.0	.88	.82	.77	.87	.81	.76	.84	.79	.75	.81	.77	.73	.79	.75	.72	.70
4.0	.80	.73	.68	.79	.72	.67	.77	.71	.66	.74	.70	.65	.72	.68	.65	.63
5.0	.73	.66	.60	.72	.65	.60	.70	.64	.59	.68	.63	.59	.67	.62	.58	.56
6.0	.67	.60	.54	.66	.59	.54	.65	.58	.54	.63	.57	.53	.62	.57	.53	.51
7.0	.62	.54	.49	.61	.54	.49	.60	.53	.49	.58	.53	.48	.57	.52	.48	.46
8.0	.57	.50	.45	.57	.50	.45	.55	.49	.44	.54	.48	.44	.53	.48	.44	.42
9.0	.53	.46	.41	.53	.46	.41	.52	.45	.41	.51	.45	.41	.50	.44	.40	.39
10.0	.50	.43	.38	.49	.42	.38	.48	.42	.38	.47	.42	.38	.46	.41	.37	.36



C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2017-01-09

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
 Humidity: 65.0%
 Test Distance: 9.500m [K=1.0000]
 Remarks:

Checker:

Assessor:

WEC AND CCEC

pcc	80%			70%			50%			30%			10%			0
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients (WEC)									
0.0																
1.0	.233	.132	.042	.226	.129	.041	.213	.122	.039	.201	.116	.037	.190	.110	.036	
2.0	.225	.123	.038	.219	.121	.037	.208	.116	.036	.198	.111	.035	.188	.106	.034	
3.0	.213	.113	.034	.208	.111	.034	.198	.108	.033	.189	.104	.032	.181	.100	.031	
4.0	.201	.105	.031	.197	.103	.030	.188	.100	.030	.180	.097	.029	.173	.094	.029	
5.0	.190	.097	.028	.186	.095	.028	.178	.093	.027	.171	.090	.027	.165	.088	.026	
6.0	.179	.090	.026	.176	.089	.026	.169	.087	.025	.163	.085	.025	.157	.083	.025	
7.0	.169	.084	.024	.166	.083	.024	.160	.081	.023	.155	.079	.023	.149	.078	.023	
8.0	.160	.078	.022	.157	.077	.022	.152	.076	.022	.147	.074	.021	.142	.073	.021	
9.0	.152	.073	.021	.149	.073	.020	.145	.071	.020	.140	.070	.020	.136	.069	.020	
10.0	.144	.069	.019	.142	.069	.019	.138	.067	.019	.134	.066	.019	.130	.065	.019	

pcc	80%			70%			50%			30%			10%			0
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Ceiling Cavity Exitance Coefficients(CCEC)									
0.0	.190	.190	.190	.163	.163	.163	.111	.111	.111	.064	.064	.064	.020	.020	.020	
1.0	.175	.157	.140	.150	.135	.121	.102	.093	.084	.059	.054	.049	.019	.017	.016	
2.0	.163	.132	.106	.140	.114	.092	.096	.079	.064	.055	.046	.038	.018	.015	.012	
3.0	.154	.114	.082	.132	.098	.071	.090	.068	.050	.052	.040	.030	.017	.013	.010	
4.0	.145	.100	.065	.124	.086	.057	.086	.060	.040	.050	.035	.024	.016	.011	.008	
5.0	.137	.089	.053	.118	.077	.046	.081	.054	.033	.047	.032	.019	.015	.010	.006	
6.0	.131	.080	.044	.112	.069	.038	.077	.049	.027	.045	.029	.016	.014	.009	.005	
7.0	.124	.073	.037	.107	.063	.032	.074	.044	.023	.043	.026	.014	.014	.009	.005	
8.0	.118	.067	.032	.102	.058	.028	.071	.041	.020	.041	.024	.012	.013	.008	.004	
9.0	.113	.062	.028	.097	.054	.024	.067	.038	.017	.039	.022	.010	.013	.007	.003	
10.0	.108	.058	.025	.093	.050	.021	.065	.035	.015	.038	.021	.009	.012	.007	.003	

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-01-09

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:9.500m [K=1.0000]
Remarks:

Checker:

Assessor:

UGR(Unified Glare Rating) Table

ceiling/cavity	0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
walls	0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions	Viewed crosswise					Viewed endwise				
x = 2H y = 2H	27.5	28.8	27.8	29.0	29.2	18.7	19.9	18.9	20.1	20.3
3H	28.2	29.4	28.5	29.6	29.8	19.0	20.2	19.3	20.4	20.6
4H	28.4	29.4	28.7	29.7	29.9	19.3	20.4	19.6	20.6	20.9
6H	28.4	29.4	28.7	29.6	29.9	19.6	20.7	20.0	20.9	21.2
8H	28.3	29.3	28.6	29.6	29.8	19.8	20.8	20.1	21.0	21.3
12H	28.3	29.2	28.6	29.5	29.8	19.9	20.9	20.3	21.1	21.4
4H 2H	27.3	28.4	27.6	28.6	28.9	19.2	20.3	19.5	20.6	20.8
3H	28.0	29.0	28.4	29.3	29.5	19.7	20.6	20.0	20.9	21.2
4H	28.2	29.0	28.6	29.3	29.7	20.0	20.9	20.4	21.2	21.5
6H	28.2	29.0	28.6	29.3	29.7	20.5	21.2	20.8	21.5	21.9
8H	28.2	28.9	28.6	29.2	29.6	20.7	21.4	21.1	21.7	22.1
12H	28.1	28.8	28.6	29.2	29.5	20.9	21.5	21.3	21.9	22.3
8H 4H	28.1	28.8	28.5	29.1	29.5	20.3	21.0	20.7	21.3	21.7
6H	28.1	28.7	28.6	29.1	29.5	20.8	21.3	21.2	21.7	22.1
8H	28.1	28.6	28.6	29.0	29.5	21.0	21.5	21.5	22.0	22.4
12H	28.1	28.5	28.6	28.9	29.4	21.3	21.7	21.8	22.2	22.7
12H 4H	28.0	28.7	28.5	29.1	29.4	20.3	20.9	20.7	21.3	21.7
6H	28.1	28.6	28.5	29.0	29.5	20.8	21.3	21.2	21.7	22.2
8H	28.1	28.5	28.6	28.9	29.4	21.1	21.5	21.6	22.0	22.4
Variations with the observer position at spacings:										
S = 1.0H	+ 1.3 / - 2.4					+ 1.0 / - 1.3				
1.5H	+ 2.5 / - 5.1					+ 1.2 / - 1.5				
2.0H	+ 3.8 / - 7.1					+ 1.3 / - 1.1				

CIE Pub.117 Corrected 12094 lm Total Lamp Luminous Flux.(8log(F/F0) = 8.7)

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-01-09

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:9.500m [K=1.0000]
Remarks:

Checker:

Assessor:

UTILIZATION FACTORS TABLE

REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	71	62	56	70	62	56	69	61	56	51
0.80	81	72	66	80	71	66	78	71	66	60
1.00	88	79	74	87	79	74	85	80	73	68
1.25	94	86	81	92	85	80	90	84	80	74
1.50	98	90	85	96	90	85	94	88	84	78
2.00	103	96	92	101	95	91	98	93	90	83
2.50	105	100	95	103	98	94	100	96	92	86
3.00	108	103	99	106	101	98	102	98	95	88
4.00	110	106	103	108	105	102	104	101	99	91
5.00	112	109	106	110	107	104	106	103	101	93
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

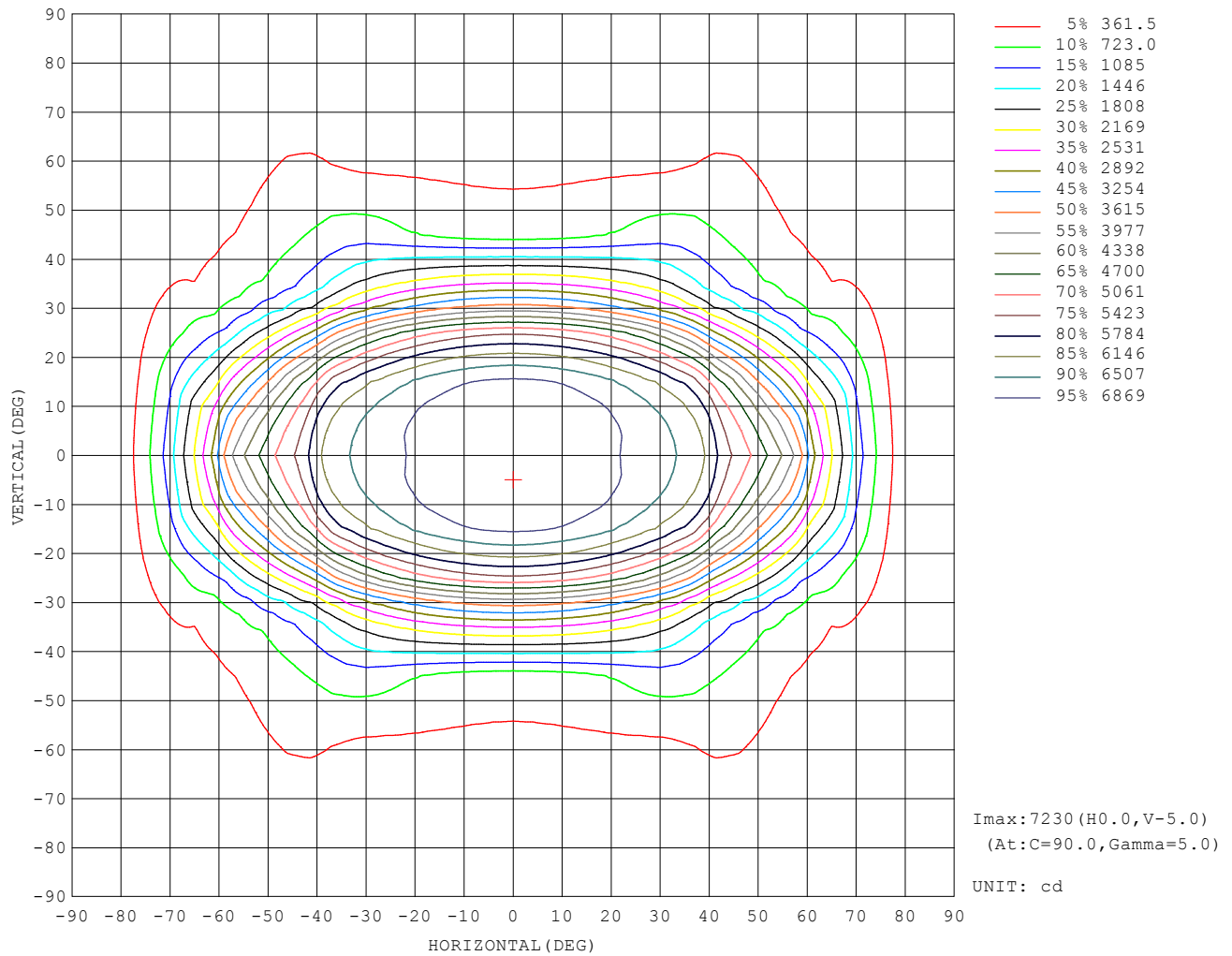
C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2017-01-09

Checker:

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
 Humidity: 65.0%
 Test Distance: 9.500m [K=1.0000]
 Remarks:

Assessor:

ISOCANDELA DIAGRAM



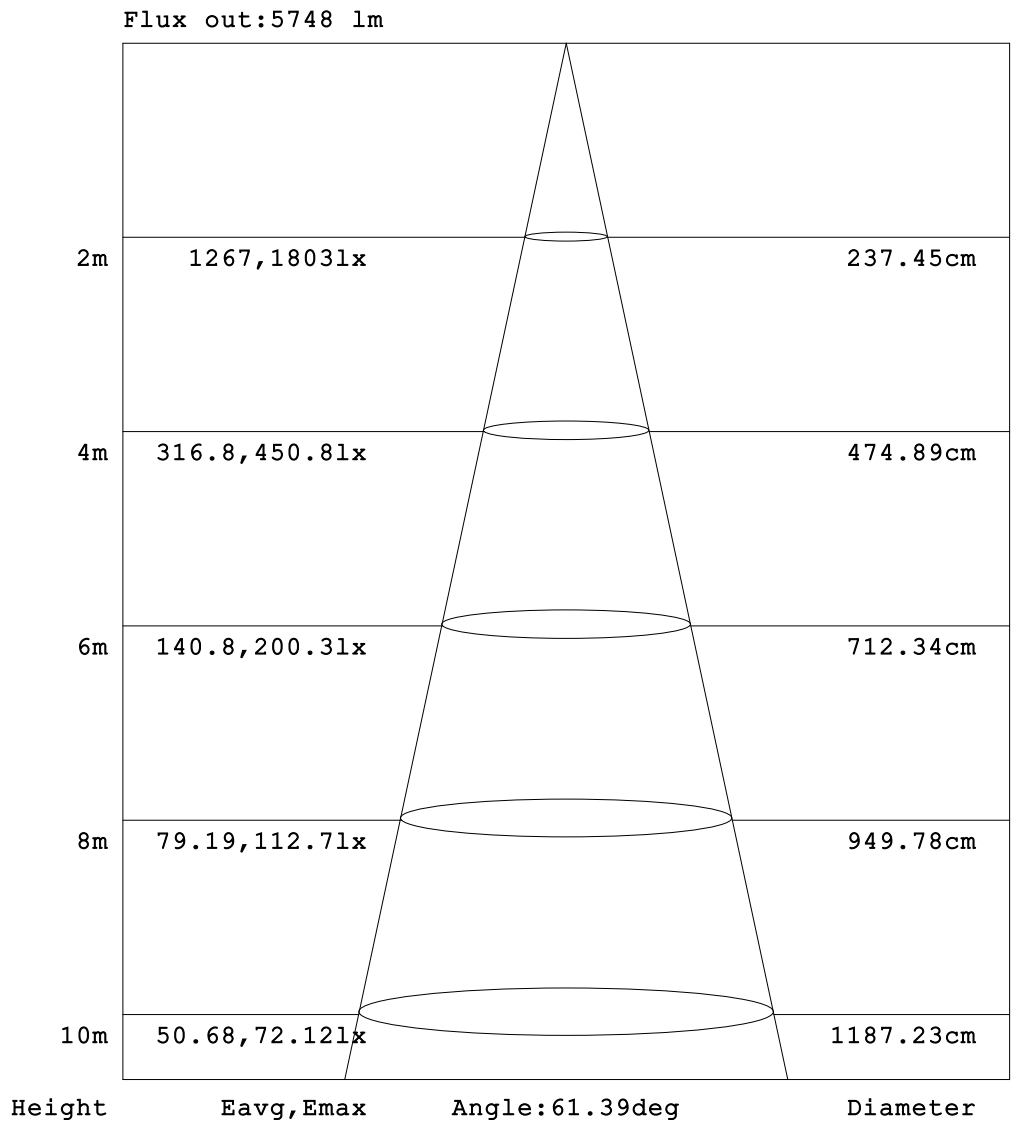
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-01-09

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity: 65.0%
Test Distance: 9.500m [K=1.0000]
Remarks:

Checker:

Assessor:

AAI Figure



Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

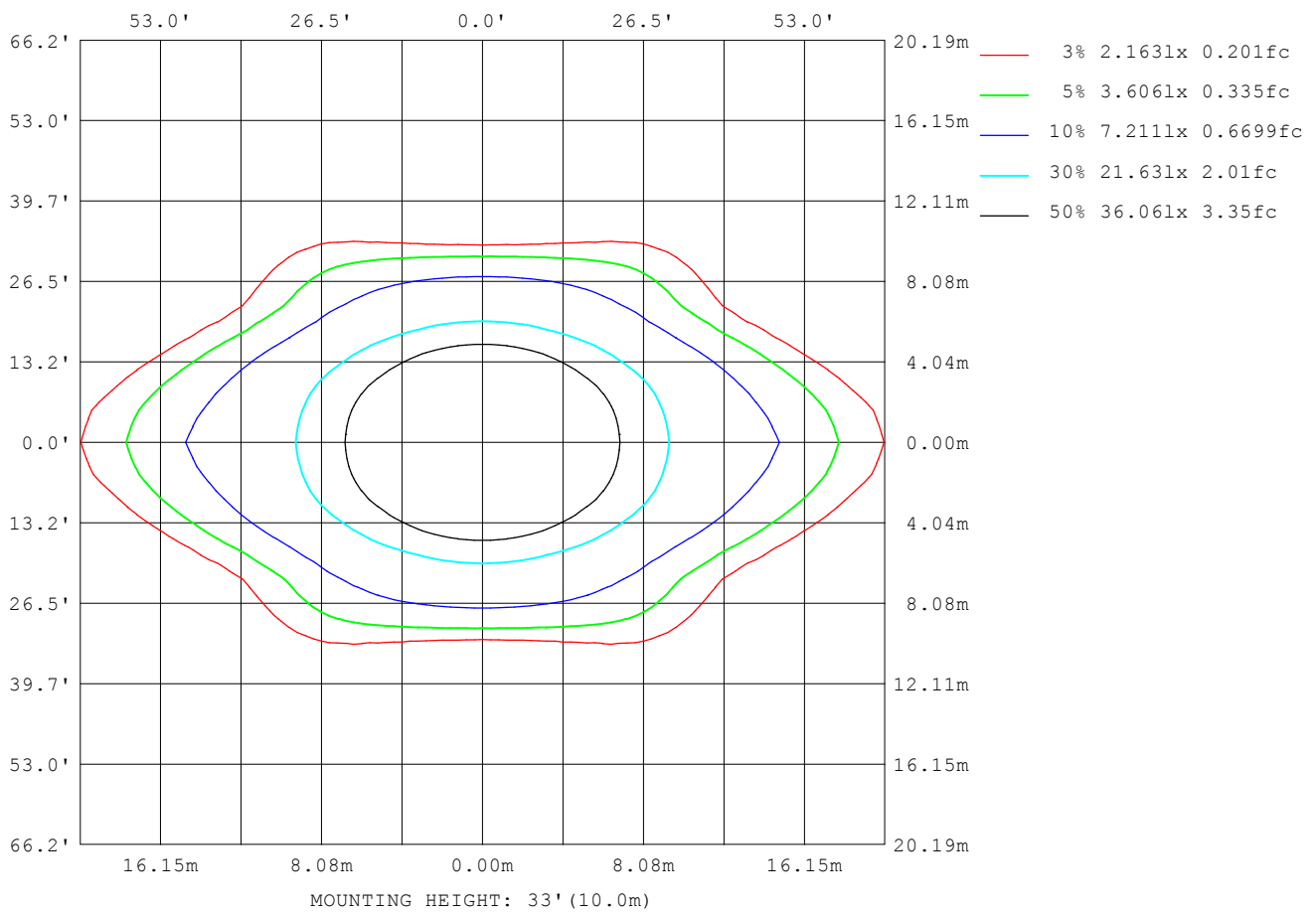
C Range: 0 - 360 DEG
C Interval: 5.0 DEG
Test Speed: HIGH
Temperature: 25.3 DEG
Operators:
Test Date: 2017-01-09

γ Range: 0 - 90 DEG
 γ Interval: 0.5 DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity: 65.0%
Test Distance: 9.500m [K=1.0000]
Remarks:

Checker:

Assessor:

ISOLUX DIAGRAM



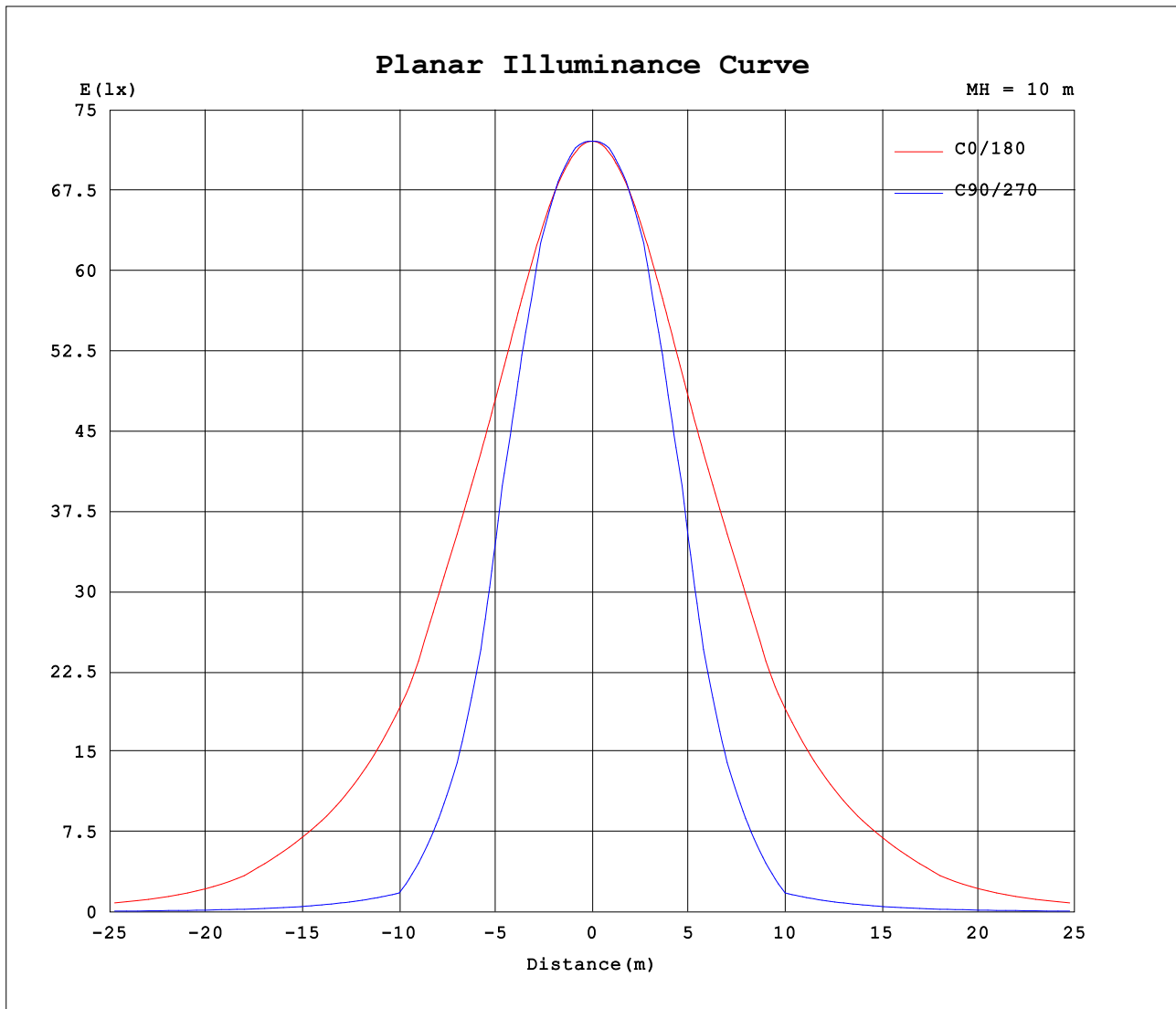
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-01-09

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:9.500m [K=1.0000]
Remarks:

Checker:

Assessor:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-01-09

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity: 65.0%
Test Distance: 9.500m [K=1.0000]
Remarks:

Checker:

Assessor:

Assessor:

Assessor:

UNIT: cd

Assessor: